Medical imaging with ionising radiation needs a good level of information for referring physicians, but radiologists and technologists have the ultimate responsibility for optimising radiation exposure. Building awareness of radiation protection in medical imaging began decades ago. The main reason behind this survey-based study was to get a better understanding of a) the current status of the radiation protection education, b) the need for information, c) compare the subgroups and level of knowledge about modalities.

**Material and methods**

Radiologists (149), radiology assistants (44) and technologists (41) were asked to respond to a survey performed in two consecutive parts with a mobile phone application (65) and then internet survey software (191, a total of 256). Twenty-two responses were removed for redundant responses or incomplete answers (254 applicants, respectively).

In the survey, 6 of the 21 questions were about the demographics of respondents. Following 6, 4, 3 and 2 multiple choice questions with only one correct answer were for radiation protection issues in general, radiography, CT and fluoroscopy respectively. The survey software was designed so that respondents were not allowed to proceed to the next question without completing the answer. Correct answers were scored as one point for each for 15 questions about radiation protection and total percentages for degree of success were calculated.

**Results**

It was found that 92, 79 and 55 of the participants were working 6-15 years, more than 15 years and 2-5 years in radiology respectively. Most of them were working for university or education institutions (129/234) and some for state hospitals (66/234). Some participants felt themselves not to be competent in radiation protection (137/234) and most of them got at least one education course for radiation protection (168/234). Half of the participants’ institutions had dose measurements for their radiology modalities (118).

Applicants were more than 50% successful in 7 of the 15 questions (3rd, 4th, 7th, 8th, 9th, 11th and 12th), but radiologists and technologists have the ultimate responsibility for optimising radiation exposure. Medical imaging with ionising radiation needs a good level of information for referring physicians, but radiologists and technologists have the ultimate responsibility for optimising radiation exposure. Building awareness of radiation protection in medical imaging began decades ago. The main reason behind this survey-based study was to get a better understanding of a) the current status of the radiation protection education, b) the need for information, c) compare the subgroups and level of knowledge about modalities.

**Introduction**

Medical imaging with ionising radiation needs a good level of information for referring physicians, but radiologists and technologists have the ultimate responsibility for optimising radiation exposure. Building awareness of radiation protection in medical imaging began decades ago. The main reason behind this survey-based study was to get a better understanding of a) the current status of the radiation protection education, b) the need for information, c) compare the subgroups and level of knowledge about modalities.

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**Discussion**

Protection of the patient from the possible harms of x-ray should be based on justification of the exam performed with an optimised exposure technique below the diagnostic reference level (DRL) (1). Previous surveys of non-radiologists showed a limited knowledge level about basic information and risks of radiation, even after attendance at educational courses (2). Similar results were detected in radiology professionals (3, 4).

Radiology awareness has been a topic of a few studies in Turkey. Gökçe et al. reported the unsatisfactory success of radiology residents mostly in the dose estimation of different modalities (5). The information level of radiology professionals was roughly 50% without a significant difference between responses from mobile phones and internet. The results show the need for education should concentrate on radiobiology and dose levels of different x-ray producing modalities. Statistically important differences of knowledge between radiologists/residents and technologists was not significant in the literature before. No important differences between years of experiences, confidence levels or different kinds of institutions show the necessity of proper education for all radiology staff. An example of success coming after a well-organised education curriculum for undergraduate students may show the direction we should follow (6).

**References**